
(12) UK Patent Application (19) GB (11) 2 101 465 A

(21) Application No 8216125
(22) Date of filing 24 May 1982

(30) Priority data

(31) 2322/81

(32) 22 May 1981

(33) Austria (AT)

(43) Application published
19 Jan 1983

(61) INT CL³

A23L 1/00

(52) Domestic classification
A2B 311 604 850 BCA

U16 1061 A2B

(56) Documents cited

GB 1 085 917

DEA OS 2839177

DEA OS 2317045

(58) Field of search

A2B

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(54) **Manufacture of sausages and like meat products**

(57) A process for manufacturing sausage and like goods comprises the working of a quantity of meat to a mix with the appropriate quantity of water or ice and then working a fatty substance, namely a vegetable oil, into a portion e.g. a third of that mix. Then the portions of the mix are

reunited, no emulsifier being used during the manufacture of the mix or during working-in of the fatty substance. The finished mix is proportioned or filled into sausage casings and then baked, boiled or smoked. The vegetable oil is preferably sunflower seed oil, and this is worked-in slowly and carefully, preferably at a temperature between 8 and 12°C.

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SPECIFICATION

Manufacture of sausages and like meat products

This invention relates to the manufacture of sausages and like meat products.

In particular, the invention relates to a process for manufacturing fresh sausage goods in which first the meat portion is worked with the corresponding quantity of water or ice to a mix, thereafter the corresponding portion of fatty substance is worked into e.g. a third of the mix and thereafter the separated e.g. two-thirds of the mix are put into the mixed composition again, wherein during the manufacture of the mix or during the working-in of the fatty substance there is no addition of emulsifier, the finished mix being the portioned or filled into sausage casings and finally baked, boiled or smoked.

Previously for the manufacture of fresh sausage products without the addition of emulsifiers essentially two processes have been used. The first consists in working beef flesh with some ice and the whole of the quantity of fat, such as lard or dripping, to be worked-in in a cutter at a temperature rising up to 15°C. Then the remaining ice corresponding to the amount of water to be added in total is mixed in, whereon a temperature reduction takes place to 12—13°C. The finally cut mix at this temperature is then passed to further processing e.g. filling and portioning of sausages, or filling into baking moulds for the manufacture of meat loaf.

According to the second process the mix of beef flesh plus water or ice is subjected to the complete cutting process. Then two-thirds of the mix are taken from the cutter and to the amount of mixture remaining in the cutter the corresponding portion of fat is added and worked-in with warming to 20°C and using a cutting process with the cutter working at its highest rate. Then the separated two-thirds of the mix are added again to the mix treated with fat, giving a final temperature of the mix of about 18°C. Further processing then takes place as in the method noted above.

The object of the invention is to manufacture sausage goods which are more wholesome and easier to digest than those which can be made by both of the processes noted above, but wherein carrying out the process itself should take place under conditions which are more favourable for the mix being worked on than in the known processes.

According to the present invention there is provided a process for the manufacture of meat products, which comprises initially comminuting a quantity of meat and corresponding proportion of water or ice to form a mix, abstracting a major portion of the mix, working a corresponding proportion of fatty substance into the remaining minor portion of the mix, recombining the two portions of the mix, the manufacture of the mix and the working-in of the fatty substance being effected without the addition of emulsifier, portioning the mix or filling into the sausage

casings and finally baking, boiling or smoking the mix, wherein the fatty substance worked in is a vegetable oil and is worked into the mix using slow mixing.

As a result of the fact that in place of pork fat, such as lard, vegetable oil is used as the added portion of fatty substance, fresh sausage goods manufactured in accordance with the invention are essentially more acceptable and easier to digest than the sausage goods previously made, so that these improved sausages and like products are of substantial importance dietetically. A further advantage consists in the fact that vegetable oils are more neutral tasting than lard, so the specific taste of the meat used in the mix comes through better and also the addition of salt, spices and seasonings can be reduced. Because of the more careful working-in, the fibrous structure of the meat is also better maintained, which also gives rise likewise to an improvement in the taste of the sausage or like goods. The consistency of the finished sausages is additionally, after boiling or smoking, more compact than when lard is used. This is derived on the one hand from the fact that vegetable oil has a higher fat content than lard per unit quantity, so that in the sausage mix lower quantities of vegetable oil relative to higher quantities of meat can be worked in, as well as having a lower proportion of water in it relative to the meat part than the case with sausage goods previously made with lard.

On the other hand, vegetable oil, even in the cooled condition, is more easily and more intimately miscible with the other components of the mix than lard, even if the processing temperature for the mix is raised to 20°C. The lower working temperatures however do not only act advantageously in terms of energy usage, but also act favourably on the storage stability and taste of the finished sausages.

From DE-OS 2 639 177 and 2 317 046 process for the manufacture of sausage goods or meat pastes with an addition of vegetable oil are known, but in both cases the addition of milk albumen as an emulsifier is carried out. In contrast to this it was wholly surprising that one could transfer processes known for the manufacture of sausages using lard without the addition of emulsifiers to processes using vegetable oil, and thereby not only achieved the desired nutrition physiological properties of the sausage, but also improve the taste, since the mixing of the mix can be carried out under conditions more favourable for the meat components.

The present invention envisages manufacture of sausage and like products where the mix is made up from beef, veal, turkey, ham or chicken meat with the addition of a corresponding quantity of water with the vegetable oil. Sausage goods made from such a mix are to be seen as genuine diet sausages, e.g. as a result of their low cholesterol content, their easy digestibility, this being the case quite particularly for chicken meat sausage goods.

The preferred vegetable oil for use in the

present invention is sunflower seed oil which is essentially neutral tasting and very easily compatible. However in practice all the vegetable nutritional oils can be used e.g. maize seed oil, groundnut oil or the like.

In accordance with the process of the invention all sorts of fresh sausage types can be manufactured such as e.g. Frankfurter type sausages, Vienna sausages, Saveloys, meat loaf products of various types, Bavarian sausage such as Weisswurst and numerous other sausage types such as Stangenwurst and Kranzextrawurst.

The process according to the invention for manufacturing sausage goods takes place in a fashion that for example beef meat with the addition of the corresponding quantity of water or ice needed in the sausage goods to be manufactured is worked up in a cutter to a mix. Thereafter a proportion of the mix such as two-thirds is taken out of the cutter. The vegetable oil quantity is then mixed in slowly to the remaining portion of the mix, with the cutter operating at its lowest setting, so that the cutting process effected by the knives located therein is almost zero. The vegetable oil is introduced into the mix in cold condition, the working temperature lying in the region between 8 and 12°C. Then the portion of the mix previously taken out of the cutter is reunited in the cutter with the remaining portion of the mix with the addition of salt, spices and reddening materials or other additives as desired. The finished mix is then for example loaded in portions into sausage skins or sausage casings. These sausages are then boiled or smoked in customary fashion. For the manufacture of meat loaves or pastes the finished mix is filled into pans and baked in these.

Subsequently the composition of mixes for Frankfurter or Vienna sausages as well as for a turkey hen sausage are given, these being all manufactured in accordance with the process of the invention.

EXAMPLE 1 Frankfurter or Vienna Sausage

50 parts by weight beef
30 parts by weight water or ice
20 parts by weight sunflower seed oil
Per 1 kg beef meat, 3 g salt and per 1 kg oil 1 g salt are used.

EXAMPLE 2 Turkey Hen Sausage

60 parts by weight turkey hen meat
20 parts by weight water or ice
20 parts by weight sunflower seed oil

By way of comparison, the corresponding proportions, were lard used as the fatty substance, in Frankfurter or Vienna sausages would be typically:

43 parts by weight beef meat
30 parts by weight water
27 parts by weight lard

these being worked to a mix, wherein per 1 kg beef meat 3 g salt and per 1 kg fat 2 g salt would be used.

CLAIMS

1. A process for the manufacture of meat products, which comprises initially comminuting a quantity of meat and a corresponding proportion of water or ice to form a mix, abstracting a major portion of the mix, working a corresponding proportion of fatty substance into the remaining minor portion of the mix, recombining the two portions of the mix, the manufacture of the mix and the working-in of the fatty substance being effected without the addition of emulsifier, portioning the mix or filling into sausage casings and finally baking, boiling or smoking the mix, wherein the fatty substance worked in is a vegetable oil and is worked into the mix using slow mixing.

2. A process according to claim 1 wherein the mix is at a temperature of between 8 and 12°C during the working in of the fatty substance.

3. A process according to claim 1 or 2 wherein the major proportion of the mix is substantially two-thirds.

4. A process according to any one of claims 1 to 3 wherein the meat is beef meat, veal, turkey hen or chicken meat.

5. A process according to any one of claims 1 to 4 wherein the vegetable oil is sunflower seed oil.

6. A process for making a meat product according to claim 1 and substantially as hereinbefore described.

7. A meat product made by the process of any one of claims 1 to 6.